

REMARKS

In the Office Action the Examiner noted that claims 1-36 are pending in the application, and the Examiner rejected all claims. By this Amendment, claim 1 has been amended to correct an informality noted by the Examiner. No new matter has been presented. Thus, claims 1-36 are pending in the application. The Examiner's rejections are traversed below, and reconsideration of all rejected claims is respectfully requested.

Claim Objection

On page 2 of the Office Action the Examiner objected to claim 1 because of an informality in the language of the claim. The Examiner stated that the word "expanding" should be "containing."

By this Amendment, claim 1 of the present application has been amended to eliminate the noted informality, and the words "expanding with" in line 5 of the claim have been replaced with the word "having." Therefore, the Applicants respectfully request the withdrawal of the Examiner's rejection of the claim.

Claim Rejections Under 35 USC §102

On pages 3-5 of the Office Action the Examiner rejected claims 1-4 and 15-24 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,623,092, issued to Kim et al. (hereinafter referred to as "Kim"). These rejections are respectfully traversed by the Applicants.

Claim 1 of the present application, as amended, recites:

An ink cartridge comprising:
at least one first chamber storing an ink;
at least one second chamber having an air inflow hole formed at an upper portion thereof to be exposed to an ambient air and an ink supply portion formed at a lower portion thereof and having an ink supply port supplying an ink, the second chamber having a negative pressure generating medium storing the ink; and
an intermediate partition having a connecting hole defined in a lower portion thereof, connecting the first and the second chambers to each other, the intermediate partition dividing the first and the second chambers;
wherein a first volume is larger than a second volume, the first volume being defined by a first face forming an ink contact surface of the negative pressure generating medium adjacent the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge, and a first vertical plane extending vertically from a center plane of the intermediate partition and the second volume being defined by the first vertical plane, the

second face, the third face, and a second vertical plane extending vertically from a wall of the intermediate partition facing the first chamber, preventing the connecting hole from being blocked with the negative pressure generating medium expanding in the second chamber.

Therefore, the first volume recited in claim 1 of the present application, which is larger than the second volume, is defined by four recited faces within the ink cartridge. These four faces are "a first face forming an ink contact surface of the negative pressure generating medium adjacent the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge, and a first vertical plane extending vertically from a center plane of the intermediate partition."

This is in direct contrast to the ink cartridge 100 disclosed in Kim, which defines no such first volume. While the Examiner lists the four recited faces of claim 1 of the present application while discussing the ink cartridge of Kim, the Applicants respectfully point out that the first volume identified by the Examiner is not actually defined as discussed by the Examiner. To wit, the ink contact surface of the sponge 122 adjacent to the clearance 112 in Figure 3 of Kim apparently does not contact the bottom of the ink cartridge 100, and therefore there is no first volume as defined in the recitation of claim 1 of the present application. Rather, the volume shown in Figure 3 of Kim, which is discussed by the Examiner as being defined by the four sides recited in claim 1 of the present application, is actually apparently bound by seven surfaces. These would include the four discussed by the Examiner, plus the outer portion of the ink supply pipe 132 facing the second chamber 160, a bottom surface of the filter 130, and a side surface of the filter 130 facing the second chamber 160. Therefore, the volume shown in Figure 3 of Kim, which begins at the rightmost point at a vertical plane extending vertically from a center plane of the intermediate partition 110, is apparently bound by at least six other surfaces, rather than the first volume bound by four surfaces recited in claim 1 of the present application.

Therefore, Kim does not disclose at least the feature of a "a first volume being defined by a first face forming an ink contact surface of the negative pressure generating medium adjacent the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge, and a first vertical plane extending vertically from a center plane of the intermediate partition." Accordingly, Kim does not disclose every element of the Applicants' claim 1. In order for a reference to anticipate a claim, the reference must teach each and every element of the claim (MPEP §2131). Therefore, since Kim does not disclose the features recited in independent claim 1, as stated above, it is respectfully submitted that claim 1 patentably distinguishes over Kim, and withdrawal of the

§102(e) rejection is earnestly and respectfully solicited.

Claims 2-4 depend from claim 1 and include all of the features of that claim plus additional features which are not taught or suggested by Kim. Therefore, it is respectfully submitted that claims 2-4 also patentably distinguish over Kim.

Claim 15 of the present application recites "a first volume with an area bounded by a vertical plane extending from a center of a bottom surface of the partition, the bottom surface of the partition on the medium chamber side, a surface of the medium, an exposed portion of a surface of the partition on the medium chamber side, and a base of the ink cartridge on the medium chamber side." As discussed in relation to claim 1 of the present application, Figure 3 of Kim apparently shows that the surface of the sponge 122 does not contact the bottom of the ink cartridge 100, and therefore there is no first volume disclosed in Kim as is defined in claim 15 of the present application. Therefore, it is also respectfully submitted that claim 15 patentably distinguishes over Kim, and withdrawal of the §102(e) rejection is earnestly and respectfully solicited.

Claims 16-24 depend from claim 15 and include all of the features of that claim plus additional features which are not taught or suggested by Kim. Therefore, it is respectfully submitted that claims 16-24 also patentably distinguish over Kim.

On pages 5-6 of the Office Action the Examiner rejected claims 1, 15-16, and 36 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0012033, issued to Iwanaga et al. (hereinafter referred to as "Iwanaga"). These rejections are respectfully traversed by the Applicants.

As discussed previously in regard to claim 1 of the present application, claim 1 recites one boundary defining the first volume as "a third face forming a bottom of the ink cartridge." This is in direct contrast to the liquid storing container disclosed in Iwanaga. The Examiner cites Figures 4A-4B, 7B, and 9B-11 of Iwanaga as disclosing the features recited in claim 1 of the present application. However, there is no first volume as recited in claim 1 disclosed in any of these figures. To wit, Figures 4A and 4B both clearly show that there is no volume whatsoever formed having the bottom of the ink cartridge as a surface thereof. The partition wall 38 extends all the way to the bottom of the ink cartridge in each of the Figures of Iwanaga, and the fiber absorber 32 is flush against the inner surface of the partition wall 38 as well as the bottom of the ink cartridge. Therefore, no volume whatsoever is formed between the fiber absorber 32 and the bottom of the ink cartridge in the vicinity of the communicating hole 40, and especially not the first volume as recited in claim 1 of the present application. Further, claim 1 also states that the

first volume being larger than the second volume prevents “the connecting hole from being blocked with the negative pressure generating medium expanding.” It is clearly shown in the Figures of Iwanaga that the fiber absorber is indeed expanding to block portions of the communicating hole 40.

Therefore, for at least the reasons presented above, it is respectfully submitted that claim 1 of the present application patentably distinguishes over Iwanaga, and withdrawal of the §102(3) rejection is respectfully requested.

Claim 15 of the present application recites “a base of the ink cartridge on the medium side” as one of the boundaries of the first volume.” Therefore, for similar reasons as discussed in relation to claim 1 patentably distinguishing over Iwanaga, the Applicants respectfully submit that claim 15 also patentably distinguishes over Iwanaga.

Claims 16 and 36 depend from claim 15 and include all of the features of that claim plus additional features which are not taught or suggested by Iwanaga. Therefore, it is respectfully submitted that claims 16 and 36 also patentably distinguish over Iwanaga.

Claim Rejections Under 35 USC §103

On pages 6-7 of the Office Action the Examiner rejected claims 5-14 and 25-35 under 35 U.S.C. §103(a) as being unpatentable over Kim in view of U.S. Patent No. 6,234,615, issued to Tsukuda (hereinafter referred to as “Tsukuda”), and further in view of U.S. Patent No. 6,682,183, issued to Jones et al. (hereinafter referred to as “Jones”).

As discussed previously in this Amendment, independent claims 1 and 15 of the present application patentably distinguish over Kim. Further, the deficiencies of Kim in regard to claims 1 and 15 are not cured by Tsukuda and/or Jones. For a proper §103 rejection, the combined references must disclose all of the features of the rejected claims. Therefore, as claims 5-14 and 25-35 depend from independent claims 1 and 15, respectively, and include all of the features of those claims plus additional features which are not taught or suggested by the cited references, it is respectfully submitted that claims 5-14 and 25-35 also patentably distinguish over the cited references.

Summary

In accordance with the foregoing, claim 1 has been amended. No new matter has been

presented. Claims 1-36 are pending and under consideration.

There being no further outstanding objections or rejections, it is respectfully submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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